REMARKS

Reexamination and reconsideration in light of the foregoing amendment and following remarks is respectfully requested. Claims 1-37 are pending in this application. Claims 1, 2, 6 and 37 have been amended. A marked up version of the changes to these appears in the APPENDIX attached hereto. No new matter has been added to the application.

Applicants appreciate the interview accorded the undersigned by the Examiner on July 26, 2002, in which the rejections of the Office Action were discussed.

REJECTION OF UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 1-7 and 18-37 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite on the following grounds:

1. The Examiner asserts that "sulfonyl" is a divalent group, and therefore, it would not be within the scope of the claimed chemical structure which shows only a monovalent position for R_1. Applicants respectfully disagree. As pointed out by the Examiner, the specification defines "sulfonyl" as being divalent, one bond would be attached at the carbon to which R_1 is attached and the other bond being attached to another group such as an alkyl. One skilled in the art would not find the use of "sulfonyl" to be indefinite from a reading of the definition in the term in the specification. However, in an effort to advance the prosecution, the term has been deleted from claim 1.

2. The Examiner finds the term "thio" to be ambiguous because the term is a prefix, and not a moiety. In an effort to advance the prosecution, the term has been deleted from claim 1.

3. The Examiner contends that claim 34 is still dependent on claim 32, and therefore, still lacks antecedent basis for the term "disease." In the last amendment, the claim

was made dependent on claim 33 which supports the term. In an interview held on July 26. 2002, the Examiner indicated that this rejection had been overcome by the amendment.

4. The Examiner maintains that the term "amido" is indefinite for the same reasons as stated in the Office Action dated January 2, 2002 and that Applicants have missed the point of the rejection. The rejection is not entirely understood. The original rejection states that the term "amido" is indefinite because "[t]here is no way of knowing whether applicants intend just carboxylic acid amides, or whether sulfonic, phosphonic, etc amides are intended." The Examiner has not specifically identified which claim the objected to term occurs. Claims 1-3 do not use the term. Claim 4 uses the term "amido group." Claims 5-7 are dependent on claim 4, but these claims do not qualify the term. Claims 18-37 do not use the term at all. Therefore the rejection appears to be directed to claims 4-7 only. The dictionary definition of "amido" is that the term is "related to or containing the group NH_2 or a substituted group NHR or NR_2 united to an acid radical." See a copy of the definition from page 79 of *Webster's Ninth New Collegiate Dictionary*, Merriam-Webster Inc., Springfield, Mass. (1989) attached as Exhibit A. From this definition, a person skilled in the art would have understood the meaning of the term "amido" to include carboxylic acid amides, sulfonic acid amides and phosphonic acid amides. It is not necessary that every term used in the claim be defined in the specification where its ordinary and customary meaning is understood. Accordingly, it is respectfully requested that the rejection be reconsidered and withdrawn.

5. The Examiner asserts that "norpinanyl" is not a heterocyclic and needs to be deleted from claim 6. In order to expedite prosecution, the term has been deleted from the claim.

6. The Examiner continues to maintain original point 18 of the rejection set forth in the Office Action dated January 2, 2002. The Examiner contends that Applicants have

misunderstood the basis for the rejection. The Examiner finds that the problem is not with the term "alkoxyalkyl, but the carbon range, i.e., it is unclear whether the range applies to the first or last alkyl or to both alkyls. It is noted that the Examiner did not reject terms such as alkylaminoalkyl, aminoalkoxyalkenyl, aminoalkoxyalkynyl, alkylamidoalkyl, and dialkoxyalkyl on similar grounds. Since the ranges in these terms have not been rendered indefinite, it is reasonable that a person skilled in the art would have found that the $C_{(1-10)}$ or $C_{(1-20)}$ notation applies to both alkyls independently. Accordingly, the range for the carbon content of the "alkoxyalkyl would not be indefinite if the ranges in the other compounds are understood.

7. The Examiner made a finding that "benzamidyl" on the last line of page 65 is not understood. The term "benzamidyl" is a name given to a radical of benzamide. The benzene ring is a carbocycle since it contains only carbons. A person skilled in the art would understand the meaning of benzamide. A copy of page 754 from Morisson and Boyd, *Organic Chemistry*, 6th Edition (1992) is attached as Exhibit B shows the chemical formula of benzamide. For these reasons, the Examiner's suggestion to delete the term has not adopted.

8. The Examiner finds that the second step in claim 19 is unclear. The preamble speaks in terms of "inhibiting" activity while step 2 is directed to "determining" activity. A person having ordinary skill in the art would have understood the scope of the claim. The first step in the claim is to contact cytokine responsive cells as defined in claim 1 and then to determine if the cellular process or activity of the cell is inhibited. On page 346, of *Webster's Ninth New Collegiate Dictionary (1989)*, the term "determine" is defined as meaning "to come to a conclusion." A copy of page 346 is attached as Exhibit C. Therefore, a person having ordinary skill in the art would have understood "determining that the cellular process or activity mediated by the cytokine is inhibited" to mean making a decision after the cytokine responsive cells are

contacted with the compound of claim 1 whether the cellular process or activity mediated by the cytokine is inhibited. Obviously, if activity or the process occurs, such a person would have determined that the activity or process is not inhibited. But, if the activity or the process does not occur, then such person would have determined that the activity or process is inhibited by contacting the cells with the compound as defined in claim 1. Nothing is seen to be indefinite about the second step in claim 19. It is respectfully requested that this rejection be reconsidered and withdrawn.

9. The Examiner finds the phrase "cellular process or activity" to be unclear indicating that there is no difference between "process" and "activity". While these terms are not specifically defined in the specification, their ordinary meanings are different. As a noun, "process" means "something going on." The term "activity" on the other hand means "a state of being active" or a state of being characterized by action rather than by contemplation or speculation. Copies of the dictionary definitions of these terms are attached as Exhibit D. Therefore, the terms are not equivalent as asserted by the Examiner.

10. The Examiner finds that unsaturated hydrocarbons with one carbon are not possible. It would appear that the Examiner is objecting to terms such as "$C_{(1-20)}$alkenyl" and "$C_{(1-20)}$alkynyl" which appear in claims 1, 2 and 37. These terms have been amended in the aforementioned claims to recite --$C_{(2-20)}$alkenyl-- and --$C_{(2-20)}$alkynyl--, respectively.

11. The Examiner has also objected to the term $C_{(1-20)}$tetraaminoalkyl as being impossible. A single carbon alkyl, i.e., methyl group, has four bonds. Each bond can have an amino group. Therefore, the group defined by the claim is possible.

12. The Examiner finds that the scope of claims 23 and 24 is unclear. Claims 23 and 24 recite that the "activity" of the method defined by claim 19 is "the secretion of

proinflammatory cytokines" and "the secretion of antiinflammatory cytokines," respectively. The Examiner's objection to the claims appears to be based on a theory that undue experimentation would be required to identify the cytokines. The language is very clear. Two different cytokines are defined - those with a proinflammatory property and those with an antiinflammatory property. Undue experimentation is not indefiniteness, just as breath of a term is not indefiniteness. A person having ordinary skill in the art reading the disclosure and claim would have understood the scope of the claim. A patent specification is not intended to be a blue print. It is not necessary for the Applicants to specifically identify every cytokine having the alleged claimed properties.

13. The Examiner objects to the term "thioalkyl" as not being standard nomenclature. However, a person skilled in the art would know that it is an alkyl containing a sulfur atom. The term has been used in the claims of issued patents. For example, see U.S. Patent No. 5,849,780, claim 15 wherein R_9 is defined as a "C_1-C_7-thioalkyl." Copies of the front page and claims of the patent are attached as Exhibit E.

For all of the foregoing reasons, it is respectfully requested that the rejections under 35 U.S.C. § 112, second paragraph, be reconsidered and withdrawn.

REJECTION OF CLAIMS 1-7 AND 18-37 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 1-7 and 18-37 stand rejected under 35 U.S.C. § 112, first paragraph, as "containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." The Examiner bases his rejection on two grounds:

1. "The third structural formula in claim 1 lacks description in the specification." In the aforesaid interview with the Examiner, he indicated that he meant the second structural formula in which R_4 is absent. Claim 1 was amended to overcome the Examiner's objection to the original structural formula because the Examiner found the structural formula to include a tetravalent nitrogen. The original formula included dashed lines which were defined to represent single or double bonds. A person having ordinary skill in the art reading the original structural formula and knowing that nitrogen is a trivalent atom would have recognized that one structure would be represented by —N(R_4)— and that another structure would be —N to satisfy the trivalent property of the N atom. Such a person would also necessarily recognize that with the latter structure, R_4 would not have been present. For example, this is evident by the disclosure of structural formulas in claims 8 and 10. It is not necessary that Applicants disclose all species represented by the second formula in claim 1. There are sufficient species disclosed. For example, see claims 10, 11, 14, 15 and 17 and see pages 35-37 and the Examples in the specification for support for the structural formula. For the foregoing reasons, it is respectfully requested that this rejection be reconsidered and withdrawn.

2. The Examiner objected to the inclusion of haloalkyl and alkoxyalkyl in the definitions of R_2 and R_3 in claim 1. These terms have been deleted from claim 1. It is believed that by this amendment, the rejection is overcome. For the foregoing reason, it is respectfully requested that the rejection be reconsidered and withdrawn.

REJECTION OF CLAIM 37 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claim 37 stands rejected under 35 U.S.C. § 112, first paragraph, as not being enabling. In particular, the Examiner found that the specification "does not reasonably provide enablement for assorted haloalkyl and alkoxyalkyl choices ...." Claim 37 does not use the terms "haloalkyl"

and "alkoxyalkyl", but claims specific haloalkyls and alkoxyalkyls for R_2 and R_3 disclosed on page 32, lines 24-27. There is adequate support for the "assorted haloalkyl and alkoxyalkyl choices" in claim 37. For this reason, it is respectfully requested that the rejection be reconsidered and withdrawn.

REJECTION OF CLAIM 4 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claim 4 stands rejected under 35 U.S.C. § 112, first paragraph, as not being enabling because the Examiner did not find enabling support for "a few substituent choices, e.g. amino and OH ...." The Examiner appears to be referring to the amino and hydroxyl groups in the Markush group of the claim. The Markush group is specifically disclosed in the paragraph bridging pages 32 and 33 of the specification. There is adequate support for the Markush grouping in claim 4. For this reason, it is respectfully requested that the rejection be reconsidered and withdrawn.

REJECTION OF CLAIMS 10, 11, 14, 15 AND 17 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 10, 11, 14, 15 and 17 stand rejected under 35 U.S.C. § 112, first paragraph, because "the specification while being enabling for one isomer, does not reasonably provide enablement for the other isomer." This rejection is not understood. The claims are each independent claims and the compounds are prepared in accordance to Examples 3, 4, 7, 8 and 10, respectively, in the specification. As best as the rejection can be understood, the Examiner appears to be asserting that the compounds claims do not come within the scope of the second structural formula in claim 1 because an R_4 is not present. Being independent claims, claims 10, 11, 14, 15 and 17 do not need to embrace the structural formulas set forth in claim 1. For the foregoing reasons, the rejection is improper and it is respectfully requested that the rejection be reconsidered and withdrawn.

REJECTION OF CLAIMS 1-36 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 1-36 stand rejected under 35 U.S.C. § 112, first paragraph, because the specification is not enabling for solvates. The method of making and using of solvates would have been known to a person having ordinary skill in the art. This is admitted to by the Examiner when the Examiner stated:

> One skilled in the art knows that solvates are prepared by exposing the compound to solvent (e.g., by preparing in the presence of solvent) and then isolating the solid. If the compound inherently forms solvates, then one will get a solvate; if not, one will not. That is, some compounds form solvates; some do not. These compounds, judging by the evidence of the specification, are in the latter category. The specification teaches no methods for overcoming this deficiency, i.e. to force a compound which does not naturally form one, to form a solvate. The specification does not even seem to be aware of the problem.

The test of enablement is whether one skilled in the art could make or use the claimed invention from the disclosures in the specification coupled with information known in the art without undue experimentation. *United States V. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1046 (1989); *In re Stephens*, 529 F.2d 1343, 1345, 188 USPQ 659, 661 (CCPA 1976). Determining enablement is a question of law based on underlying factual findings. *In re Vaeck*, 947 F.2d 488, 495, 20 USPQ2d 1438, 1444 (Fed. Cir. 1991); *Atlas Powder Co. v. E.I. Du Pont De Nemours & Co.*, 750 F.2d 1569, 1573, 224 USPQ 409, 411 (Fed. Cir. 1984). In determining whether a disclosure would require undue experimentation to make the claimed subject matter, the Examiner must consider the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404, (Fed. Cir. 1988),

citing with approval *Ex parte Forman*, 230 USPQ 526, 547 (Bd. Pat. App. & Int. 1986). The burden is on the Examiner to establish a reasonable basis to question the adequacy of Applicants' disclosure. *In re Marzocchi*, 439 F.2d 220, 223-224, 169 USPQ 367, 370 (CCPA 1971).

The Examiner makes the statement that "judging by the evidence of the specification," the compounds of the claimed invention would not form a solvate. What evidence? The Examiner has not set forth any evidence or cogent scientific reasoning based on evidence to support his conclusion. Furthermore, it would not appear from the Examiner's description of what is known in the art that undue experimentation would be required for a person having ordinary skill in the art to form a solvate. For the foregoing reasons, it is respectfully requested that the rejection be reconsidered and withdrawn.

REJECTION CLAIMS 19-25 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 19-25 stand rejected under 35 U.S.C. § 112, first paragraph, because the claims contain subject matter which is not described in the specification in such as way as to enable one skilled in the art to make and/or use the invention. In particular, the Examiner found that the term "cytokine" to be so broad that a person having ordinary skill in the art would been required to engage in undue experimentation to determine what cytokine are within the scope of the claims. Applicants respectfully traverse this rejection.

Base claim 19 is very clear. It is directed to a method of inhibiting an activity by a cytokine by contacting those cells that are responsive to a cytokine and determining whether the activity is inhibited. It is very simple. Any person skilled in the art would have understood the scope of the claim. No undue experimentation would have been required. The Examiner appears to be concerned about the scope of the method in that it would cover any cellular activity mediated by a cytokine. The Examiner's made a finding that cytokines are "extraordinary

diverse in their structure and function," but he has not provided any evidence to support his discussion of cytokines. *See In re Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). The only function required in the claim is that the cytokine mediate cell activity. No particular cytokine need be specified. It is a simple matter of contacting the cell with he compound as set forth in claim 1 and determining whether the cytokine activity is inhibited or not.

The Examiner has discussed the *Forman* factors in determining whether undue experimentation is required.

1. The breadth of the claims. The claims are not so broad such that a person skilled in the art would not be able to practice the invention. The cytokine mediates cellular activity or it does not, and if it does, it only matters if the activity is inhibited by contacting the cells with a compound within the scope of claim 1.

2. The nature of the invention and predictability of in the art is another factor. The Examiner concludes that there is a degree of unpredictability because "[i]t is well established that 'the scope of enablement varies inversely with the degree of unpredictability of the factors involved ...." The Examiner made a finding that "physiological activity is generally considered to be an unpredictable factor." As support for this, the Examiner relies on *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). While this may be the holding of *Fisher*, it is not evidence that the physiological activity is a factor in the method of base claim 19 or any claim dependent thereon. The Examiner has not presented any cogent reasoning based on evidence as to why in the present claimed method that the physiological activity would have been unpredictable.

3. The direction or guidance presented in the specification. The only evidence that the Examiner has put forth is that the specification discloses an "immense list of disorders" and a

"dosage range" that "is as broad as a million fold range ... and is generic as to the particular disease." This not evidence that there is no reasonable guidance or direction in the specification that would have required undue experimentation by a person having ordinary skill in the art. The specification sets forth diseases known by a person having ordinary skill in the art to be caused by cytokine mediate a cellular activity. The specification gives approximate dosage ranges. There is no evidence or cogent scientific reasoning presented by the Examiner as to why the description in the specification would not have enabled a person skilled in the art to practice the invention set forth in claims 19-25 without undue experimentation.

4. The state of the prior art. The Examiner has not presented any prior art, let alone discussed any prior art. No patents or literature articles are cited or used as references. *See In re Lee, supra.* The Examiner's discussion is not supported by evidence and is related to generic and specific cytokines that may or may not mediate cell activity depending on conditions and which may or may not be inhibited by the compounds defined in claim 1. But this alone does not indicate that undue experimentation would have been required by a person having ordinary skill in the art to practice the invention. As discussed *supra*, the scope of the claims is clear, contacting a cell mediated by cytokine activity and determining if the activity is inhibited. Even a layman can see that this method does not require undue experimentation.

5. Working examples. The Examiner points out that Examples 11 and 12 show suppressing IL-4 or IL-12 signaling. While these may be the only working examples in the specification, there is no requirement that Applicants present working examples for every conceivable cytokine known in the art. From these examples, the Examiner has not established that a person having ordinary skill in the art would have been able to reasonable practice the invention set forth in claims 19-25 without undue experimentation.

6. Skill in the art. The Examiner characterizes the level of skill in the art of the present invention as "low, relative to the complexity of the task." The task is simple, contact cytokine mediated cells with a compound defined by claim 1 and determine if the activity mediated by the cytokine is inhibited. The Examiner discusses the scope of cytokine activity, but he has not presented any evidence that the scope of cytokine activity would require undue experimentation by a person having ordinary skill in the art.

7. The final factor is the quantity of experimentation needed. The Examiner's position is that "[e]xtensive experimentation will be needed" because of the state of the art, that is the complexity of the activity of cytokines. The technical information provided by the Examiner in his discussion of this factor concerning α-TNF is not supported by any evidence. In any event, this information fails to establish that a quantity of experimentation would be required for a person skilled in the art to practice the invention set forth in claims 19-25. The method of base claim 19 is simple: contact a cytokine mediated cell with a compound defined by claim 1 and then determine whether the cytokine activity is inhibited. If α-TNF activity is inhibited by the method, it is a cytokine within the scope of the claim. The fact that suppressing α-TNF may make a condition worse, is immaterial to the claim and it certainly does not establish that extensive experimentation would be required to practice the method set forth in claims 19-25.

For the foregoing reasons, the Examiner has not established that undue experimentation would be required to practice the invention defined by claims 19-25. Accordingly, it is respectfully requested that the rejection be reconsidered and withdrawn.

OBJECTION TO CLAIMS 4-7

Claims 4-7 are objected to under 37 CFR § 1.75(c) as being improper dependent claims because they fail to further limit the subject matter of a previous claim. Applicants disagree.

Claim 4 is directed to the substituted substituents of R_2 and R_3 groups. Claim 5 defines the substituted substituents on the heterocyclic group or carboxylic group set forth in claim 4. Claim 6 defines the heterocyclic group set forth in claim 4, and claim 7 defines the carbocyclic group set forth in claim 4. It is respectfully requested the rejection be reconsidered and withdrawn.

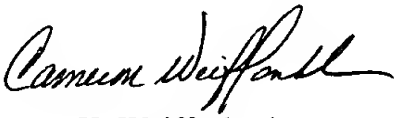
Conclusion

For the foregoing reasons, it is submitted that the claims 1-37 are believed to comply with the requirements of 35 U.S.C. § 112. Accordingly, favorable reconsideration of the claims is requested in light of the preceding amendments and remarks, and the allowance of the claims is courteously solicited.

To the extent necessary, a petition for a one-month extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT, WILL & EMERY



Cameron K. Weiffenbach
Registration No. 44,488

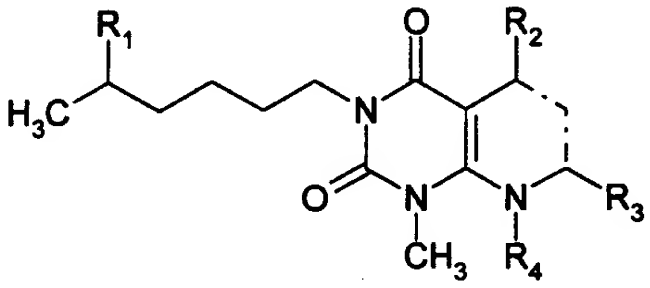
600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 CKW:apr
Facsimile: (202) 756-8087
Date: September 30, 2002

APPENDIX

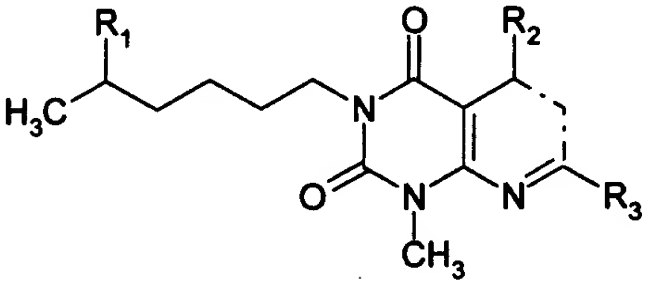
VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 1, 2, 6 and 37 as follows:

1. (Twice Amended) A therapeutic compound, including resolved enantiomers, diastereomers, tautomers, salts and solvates thereof, having one of the following formulae:



or



wherein:

R_1 is selected from a member of the group consisting of hydrogen, hydroxyl, methoxyl, acylamino group, cyano group, sulfo, [sulfonyl,] sulfinyl, sulfhydryl (mercapto), sulfeno, sulfanilyl, sulfamyl, sulfamino, and phosphino, phosphinyl, phospho, phosphono and $-NR_aR_b$, wherein each of R_a and R_b may be the same or different and each is selected from the group consisting of hydrogen and optionally substituted: $C_{(1-20)}$alkyl, $C_{(3-12)}$cycloalkyl, [$C_{(1-20)}$alkenyl] $C_{(2-20)}$alkenyl, $C_{(3-12)}$cycloalkenyl, [$C_{(1-20)}$alkynyl] $C_{(2-20)}$alkynyl, aryl, heteroaryl, and heterocyclic group;

R_2 and R_3 are independently selected from a member of the group consisting of halo, [thio,] oxo, [haloalkyl, alkoxyalkyl,] $C_{(1-20)}$alkyl, $C_{(1-20)}$hydroxyalkyl, $C_{(1-20)}$thioalkyl, $C_{(1-20)}$alkylthio, $C_{(1-20)}$alkylaminoalkyl, $C_{(1-20)}$aminoalkyl, $C_{(1-20)}$aminoalkoxyalkenyl, $C_{(1-20)}$aminoalkoxyalkynyl, $C_{(1-20)}$diaminoalkyl, $C_{(1-20)}$triaminoalkyl, $C_{(1-20)}$tetraaminoalkyl, $C_{(1-20)}$alkylamido, $C_{(1-20)}$alkylamidoalkyl, $C_{(1-20)}$amidoalkyl, $C_{(1-20)}$acetamidoalkyl, [$C_{(1-20)}$alkenyl] $C_{(2-20)}$alkenyl, [$C_{(1-20)}$alkynyl] $C_{(2-20)}$alkynyl, $C_{(1-20)}$alkoxyl, $C_{(1-20)}$alkoxyalkyl, $C_{(1-20)}$dialkoxyalkyl, and $-NR_aR_b$; and

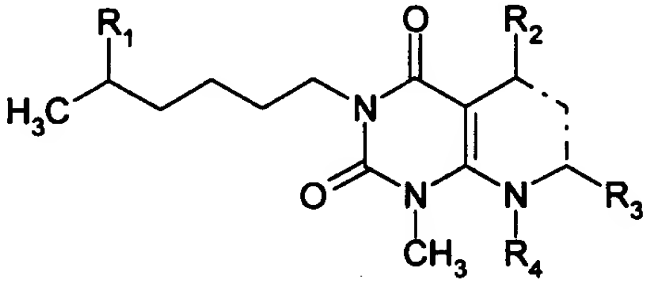
R_4 may be hydrogen or an optionally substituted member of the group consisting of $C_{(1-20)}$alkyl, $C_{(3-12)}$cycloalkyl, [$C_{(1-20)}$alkenyl] $C_{(2-20)}$alkenyl, $C_{(3-12)}$cycloalkenyl, [$C_{(1-20)}$alkynyl] $C_{(2-20)}$alkynyl, aryl, heteroaryl, and heterocyclic group.

2. (Amended) The therapeutic compound of claim 1, wherein R_2 and R_3 are independently selected from a member of the group consisting of hydrogen, halo, thio, oxo, $C_{(1-10)}$alkyl, $C_{(1-10)}$hydroxyalkyl, $C_{(1-10)}$thioalkyl, $C_{(1-10)}$alkylthio, $C_{(1-10)}$alkylamino, $C_{(1-10)}$alkylaminoalkyl, $C_{(1-10)}$aminoalkyl, $C_{(1-10)}$aminoalkoxyalkenyl, $C_{(1-10)}$aminoalkoxyalkynyl, $C_{(1-10)}$diaminoalkyl, $C_{(1-10)}$triaminoalkyl, $C_{(1-10)}$tetraaminoalkyl, $C_{(1-10)}$aminotrialkoxyamino, $C_{(1-10)}$alkylamido, $C_{(1-10)}$alkylamidoalkyl, $C_{(1-10)}$amidoalkyl, $C_{(1-10)}$acetamidoalkyl, [$C_{(1-10)}$alkenyl] $C_{(2-10)}$alkenyl, [$C_{(1-10)}$alkynyl] $C_{(2-10)}$alkynyl, $C_{(1-10)}$)alkoxyl, $C_{(1-10)}$alkoxyalkyl, and $C_{(1-10)}$dialkoxyalkyl.

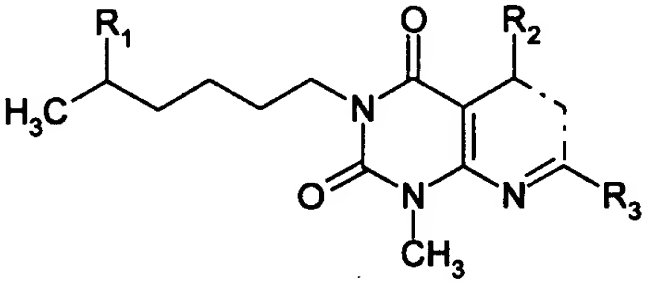
6. (Twice Amended) The therapeutic compound of claim 4, wherein the heterocyclic group is a member selected from the group consisting of acridinyl, aziridinyl, azocinyl, azepinyl, benzimidazolyl, benzodioxolanyl, benzofuranyl, benzothiophenyl, carbazole, 4a H-carbazole, chromanyl, chromenyl, cinnolinyl, decahydroquinolinyl, dioxoindolyl, furazanyl, furyl, furfuryl, imidazolidinyl, imidazolinyl, imidazolyl, 1H-indazolyl, indolenyl, indolinyl, indolizinyl, indolyl, 3H-indolyl, isobenzofuranyl, isochromanyl, isoindolinyl, isoindolyl, isoquinolinyl, isothiazolyl, isoxazolyl, morpholinyl, naphthyridinyl, [norpinanyl,] octahydroisoquinolinyl, oxazolidinyl, oxazolyl, oxiranyl, perimidinyl, phenanthridinyl, phenanthrolinyl, phenarsazinyl, phenazinyl, phenothiazinyl, phenoxathiinyl, phenoxazinyl, phthalazinyl, piperazinyl, piperidinyl, 4-pipendonyl, piperidyl, pteridinyl, purinyl, pyranyl, pyrazinyl, pyrazolidinyl, pyrazolinyl, pyrazolyl, pyridazinyl, pyndinyl, pyridyl, pyndyl,

pyrimidinyl, pyrrolidinyl, 2-pyrrolidonyl, pyrrolonyl, pyrrolyl, 2H-pyrrolyl, quinazolinyl, 4H-quinolizinyl, quinolinyl, quinoxalinyl, quinuclidinyl, β-carbolinyl, tetrahydrofuranyl, tetrahydroisoquinolinyl, tetrahydroquinolinyl, tetrazolyl, 6H-1,2,5-thiadiazinyl, 2H-,6H-1,5,2-dithiazinyl, thianthrenyl, thiazolyl, thienyl, thiophenyl, triazinyl, xanthenyl and xanthinyl.

37. (Amended) A therapeutic compound, including resolved enantiomers, diastereomers, tautomers, salts and solvates thereof, having one of the following formulae:



or



wherein:

R_1 is selected from a member of the group consisting of hydrogen, hydroxyl, methoxyl, acylamino group, cyano group, sulfo, sulfonyl, sulfinyl, sulfhydryl (mercapto), sulfeno, sulfanilyl, sulfamyl, sulfamino, [and] phosphino, phosphinyl, phospho, phosphono and $-NR_aR_b$, wherein each of R_a and R_b may be the same or different and each is selected from the group consisting of hydrogen and optionally substituted: $C_{(1-20)}$alkyl, $C_{(3-12)}$cycloalkyl, [$C_{(1-20)}$alkenyl] $C_{(2-20)}$alkenyl, $C_{(3-12)}$cycloalkenyl, [$C_{(1-20)}$alkynyl] $C_{(2-20)}$alkynyl, aryl, heteroaryl, and heterocyclic group;

R_2 and R_3 are independently selected from a unsubstituted or substituted member of the group consisting of methyl, ethyl, oxo, isopropyl, n-propyl, isobutyl, n-butyl, t-butyl, 2-hydroxyethyl, 3-hydroxypropyl, 3-hydroxy-n-butyl, 2-methoxyethyl, 4-methoxy-n-butyl, 5-hydroxyhexyl, 2-bromopropyl, 3-dimethylaminobutyl, 4-chloropentyl, methylamino, amino-methyl, and methylphenyl; and

R_4 may be hydrogen or an optionally substituted member of the group consisting of $C_{(1-20)}$alkyl, $C_{(3-12)}$cycloalkyl, [$C_{(1-20)}$alkenyl] $C_{(2-20)}$alkenyl, $C_{(3-12)}$cycloalkenyl, [$C_{(1-20)}$alkynyl] $C_{(2-20)}$alkynyl, aryl, heteroaryl, and heterocyclic group.